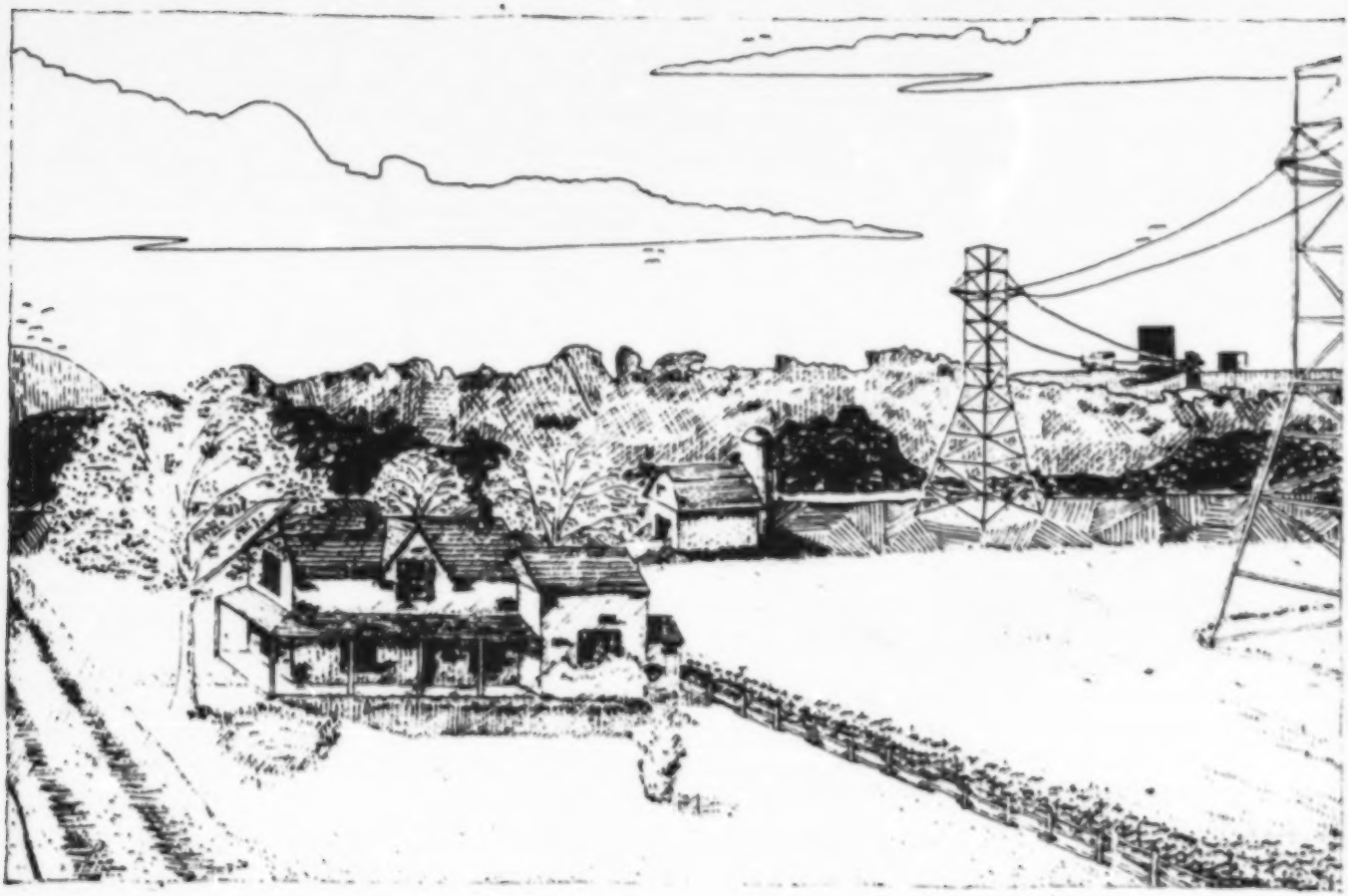
NORTHEAST SCARBOROUGH LAND USE STUDY



NATURAL AND ENVIRONMENTALLY SENSITIVE AREAS REPORT

SCARBOROUGH
PLANNING DEPARTMENT · K.J. WHITWELL, COMMISSIONER
DECEMBER 1984

NORTHEAST SCARBOROUGH

LAND USE STUDY

NATURAL AND ENVIRONMENTALLY SENSITIVE AREAS REPORT

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INTRODUCTION

This report has been prepared as background information for the Northeast Scarborough Land Use Study, additional to that outlined in the Northeast Scarborough Land Use Study Background Report, September, 1984. The information contained in this report provides a more detailed analysis of the environmentally sensitive and natural areas within the Northeast Scarborough Study Area and contains information summarized directly from:

1. "An Assessment of Natural Areas in Scarborough, Part 2, City of Scarborough Works Department, 1983".

2. "Environmentally Significant Areas Study, Metropolitan Toronto and Region Conservation Authority, 1982".

The report is organized by areas as outlined on the Natural and Environmentally Sensistive Areas - Map A on page v. Evaluation criteria which were used to determine the areas are outlined on page iv.

EVALUATION CRITERIA

The criteria used for determining the Environmentally Sensitive Areas by the Metropolitan Toronto and Region Conservation Authority are outlined as follows:

Criterion 1: The area represents a distinctive and unusual landform or feature within the M.T.R.C.A. region, Ontario and Canada.

Criterion 2: The ecological function of the area contributes significantly to the healthy maintenance of a natural system beyond its boundaries:

(a) the area serves as a water storage area of high soil permeability area and/or

(b) the area helps to maintain or link significant natural biological systems, and/or

(c) the area is essential for the healthy continuation of a significant species and/or significant population or concentration of species.

Criterion 3: The habitats and/or biological communities are identified as exceptional and/or of high quality within the M.T.R.C.A. region, Ontario or Canada.

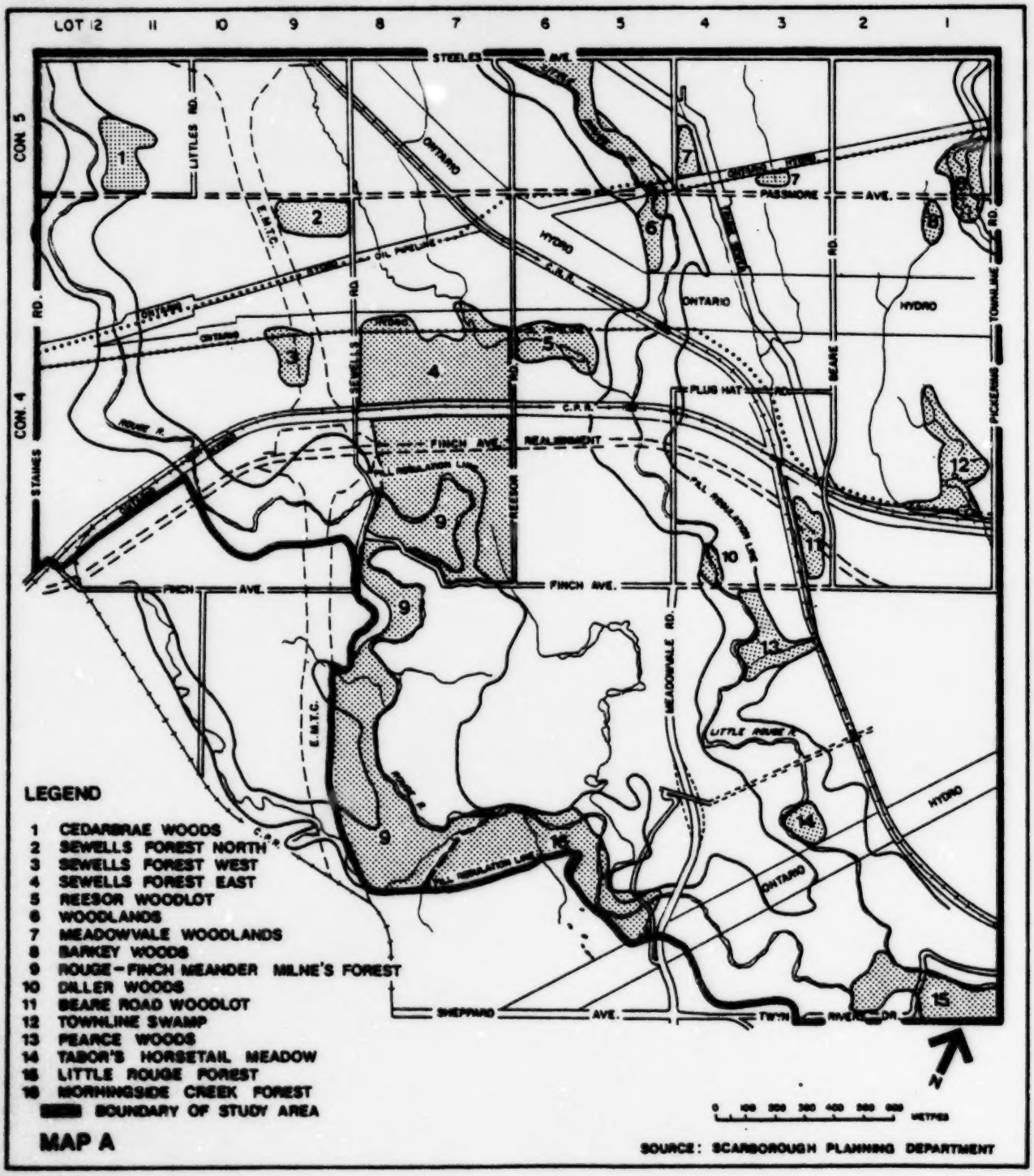
Criterion 4: The area contains an ecosystem which has limited representation in the M.T.R.C.A. region, Ontario or Canada and/or is a small remnant of a particular habitat which has virtually disappeared within the M.T.R.C.A. region.

Criterion 5: The area has an unusually high diversity of biological communities and/or species.

Criterion 6: The area provides natural habitat for indigenous species that are rare and/or endangered regionally (M.T.R.C.A.), provincially and nationally.

Criterion 7: The area is sufficiently large to afford habitat for species which require extensive blocks of suitable habitat.

NATURAL AND ENVIRONMENTALLY SENSITIVE AREAS



MAP A

SOURCE: SCARBOROUGH PLANNING DEPARTMENT

AREA 1 CEDARBRAE WOODS

Area 1, in part of Lot 11, Concession V, is a particularly fine example of a natural valley forest. The dominant canopy species is white cedar (Thuja occidentalis). The study area is an important habitat link within the Rouge River system. The bottomlands are regularly flooded at spring run-off and remains permanently saturated. The soils are organic and rich.

The forest covers 5 hectares and is dominated by 2 conifer species: white cedar in the valley floor, and hemlock (Tsuga canadensis) on the slopes. The canopy is dense and, therefore, the micro-climate is cool, dark and moist. The valley floor habitat contains superior specimens of white cedar and is characterized by an abundance of water-tolerant shrubs and herbs.

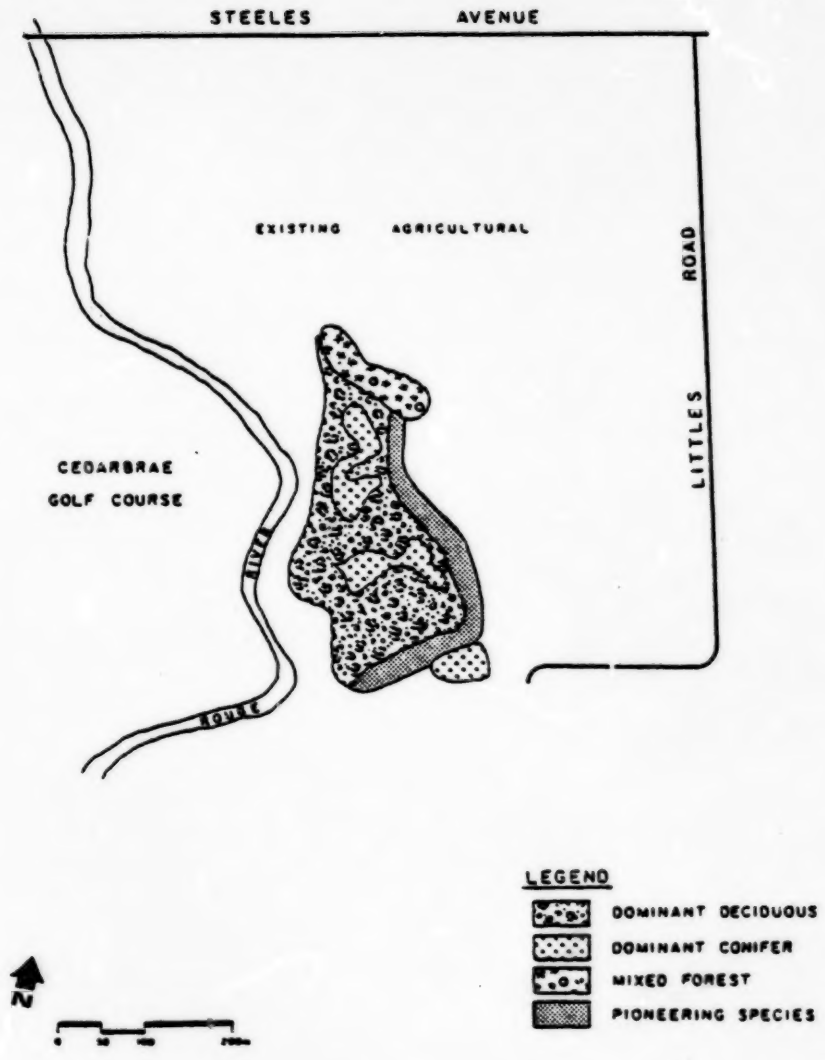
This ground cover presents an especially picturesque spring show with purple loosestrife (Lythrum salicaria), jewelweed (Impatiens biflora), dame's rocket (Hesperis matronalis), masses of ostrich fern (Matteuccia struthiopteris), and blankets of moneywort (Lusimachia nummularia). There appeared to be a significant number and variety of mosses and fungi on the valley floor.

While the slopes are dominated by hemlock, they also contained an assortment of more southerly species such as pin cherry (Prunus pensylvanica), black cherry (Prunus serotina), hop hornbeam (Ostrya virginiana) and black maple (Acer nigrum). Fifty-five herbaceous species were recorded along the slope. There are also numerous valuable wildlife shrubs such as elderberry (Sambucus canadensis), raspberry (Ribes idaeus) and nannyberry (Viburnum trilobum). The slope vegetation is more diverse than that on the valley floor. Some intrusion of grasses and pioneering field species has occurred along the edges of the study area, however, the overall percentage of alien plants is still low.

The vegetation patterns and topography are attractive to wildlife. It has a high diversity of small mammals including mole (Condylura cristata), eastern cottontail (Sylvilagus floridanus), mouse (Peromyscus leucopus), vole (Microtus pennsylvanicus) and squirrel (Sciurus carolinensis) (Walden and Griffiths, 1974). Field investigations also revealed a significant number of denning holes for red fox (Vulpes vuples). The high wildlife value is directly attributable to location as part of the Rouge River System.

The forest, while interesting, is not unusual within the Metropolitan Toronto Region. Nevertheless, it has great value for erosion control and water retention. Its significance is further emphasized due to its link within the Rouge River system. It is a high quality natural area.

AREA 1


STEELES AVENUE
EXISTING AGRICULTURAL
LITTLES ROAD
CEDARBRAE GOLF COURSE
HUMBER RIVER
N
LEGEND
DOMINANT DECIDUOUS
DOMINANT CONIFER
MIXED FOREST
PIONEERING SPECIES

AREA 2 SEWELLS FOREST - NORTH

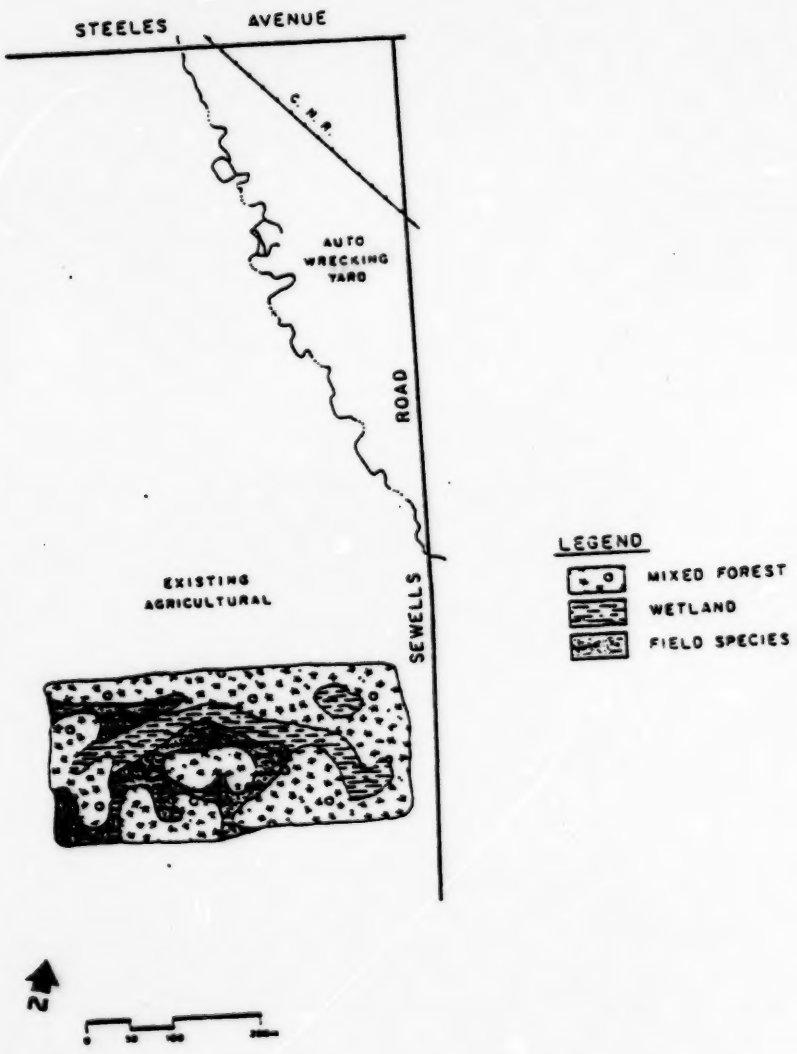
Area 2, in part of Lot 9, Concession V, is a mixed deciduous forest in an early successional stage of development. It contains a number of different habitat units ranging from hedgerows, orchards and sedge meadows, to open fields, shrub thickets and semi-mature hardwood stands.

There are several large specimens of sugar maple (Acer saccharum) and beech (Fagus grandifolia) along the eastern boundary. The study area was cut over years ago for agricultural purposes, but was then abandoned. As a result, the area has a high proportion of alien ground cover species, and a correspondingly large amount of pioneering shrubs and trees.

While pioneering landscapes are not aesthetically appealing, they do provide necessary habitats for particular bird types and small mammals. The variety in habitat units, and the high degree of interspersion between the various habitats support an abundant population of mouse (Peromyscuc leucopus), vole (Microtus pennsylvanicus), rabbit (Sylvilagus floridanus), and raccoon (Procyon lotor) (Walden and Griffiths, 1974).

The area is equally attractive to the following bird species: American woodcock (Philohela minor), ring-necked pheasant (Phasianus colchicus), red-tailed hawk (Buteo jamaicensis), eastern kingbird (Tyrannus tyrannus), bobolink (Polichonyx oryzivorus). savannah sparrow (Passerculus sandwichensis), song sparrow (Melospiza melodia) and eastern meadowlark (Sturnella magna). Other birds include robin (Turdus migratorius), American kestrel (Flavo sparvarius), field sparrow (Spizella pusilla), and the regionally rare vesper sparrow (Pooecetes gramineus).

AREA 2


STEELES AVENUE
C.N.R.
AUTO WRECKING YARD
ROAD
SEWELLS
EXISTING AGRICULTURAL
LEGEND
MIXED FOREST
WETLAND
FIELD SPECIES
N

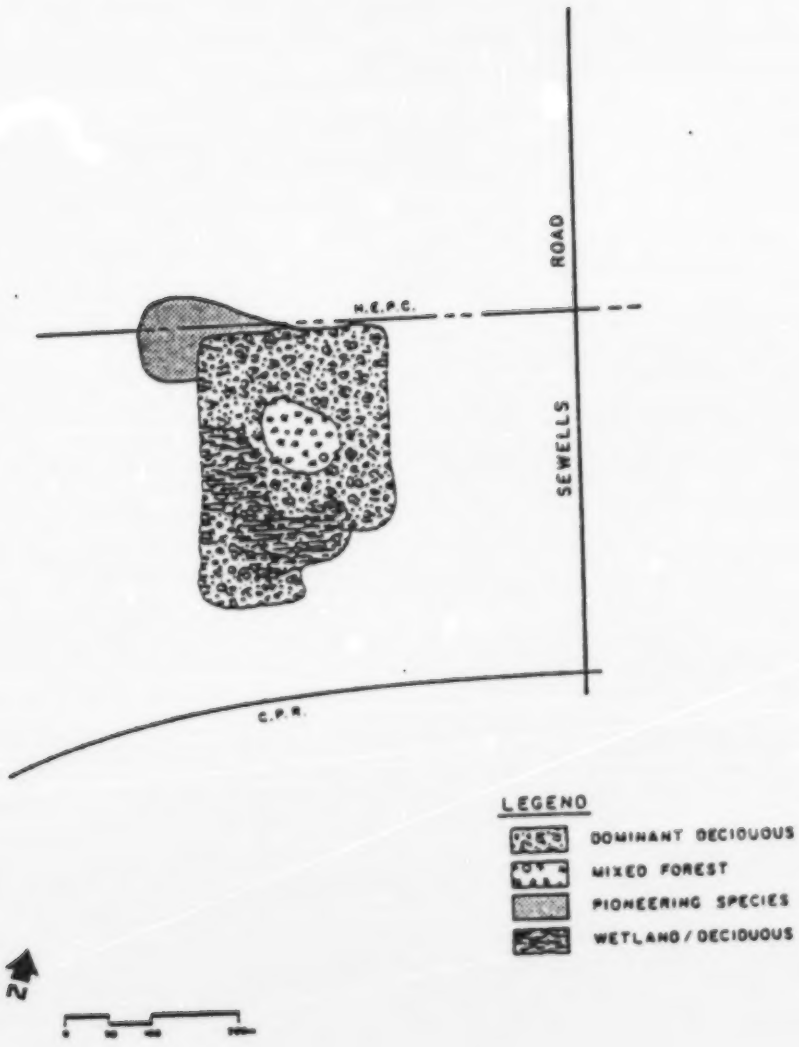
AREA 3 SEWELLS FOREST - WEST

This mixed deciduous forest in part of lot 9, Concession IV, approximately 5 hectares in size, is in an earlier successional stage. The forest is surrounded by cultivated rye and corn fields. The canopy species are primarily young hardwoods including sugar maple (Acer saccharum), beech (Fagus grandifolia), white ash (Fraxinus americana), and black cherry (Prunus serotina), with thick understory layers of ironwood (Carpinus caroliniana), choke cherry (Prunus virginiana), elderberry (Sambucus canadensis), and honeysuckle (Lonicera tatarica).

Mole (Condylur cristata) and eastern cottontail (Sylvilagus floridanus) were abundant, with frequest sightings of ring-becked pheasant (Phasianus colchicus) and red-tailed hawk (Buteo jamaicensis). However, the overall diversity of animals within the woods is low (Walden and Griffiths, 1974).

The forest is extremely sensitive to activity due to drainage and organic soils. There are other more representative forests of higher quality within the northeast area.

AREA 3


ROAD
H.E.P.C.
SEWELLS
C.P.R.
LEGEND
DOMINANT DECIDUOUS
MIXED FOREST
PIONEERING SPECIES
WETLAND / DECIDUOUS
N

AREA 4 SEWELLS FOREST - EAST

Area 4, part of Lots 7 & 8, Concession IV, is bounded by Sewells Road on the west, the Ontario Hydro right-of-way on the north, Reesor Road on the east, and the C.P.R. on the south.

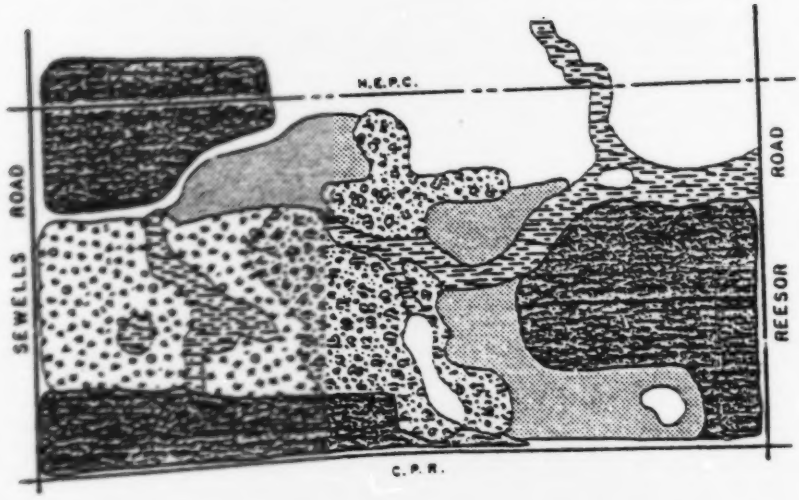
The woodlot can be divided into 2 sections. The western section is dominated by red oak (Quercus rubra) and sugar maple (Acer Saccharum). White ash (Fraxinus americana) and basswood (Tilia americana) are also present, but they are less important. The understory of this section is predominantly white ash, basswood, sugar maple and ironwood (Carpinus caroliniana), with greatest regeneration in choke cherry (Prunus virginiana) and sugar maple.

The composite diversity rating (taking into account plant diversity and animal diversity) is very good. The eastern section contains a small wetland. The dominant canopy species in this section are sugar maple and white ash. Hop hornbeam (Ostrya virginiana), basswood, and yellow birch (Betula lutea) are also present. The understory is largely beech (Fagus grandifolia) and white ash, as well as sugar maple and hop hornbeam. The regenerating species are chiefly white ash, sugar maple and hop hornbeam.

Walden and Griffiths (1974) gave the area their highest mammal diversity rating. Two red fox (Vulpes vulpes) dens were located. Mole (Condylura cristata) was very abundant, eastern cottontail (Sylvilagus floridanus) and hare (Lepus americanus) were abundant, and mouse (Peromyscus leucopus), vole (Microtus pennsylvananicus), and raccoon (Procyon lotor) were frequent. Two regionally rare birds were sighted: American woodcock (Philohela minor), and yellow-billed cuckoo (Coccyzus americanus).

Although the woodlot is stable now, it is highly sensitive to activity. The bird and small mammal diversity is likely related to its close proximity to the Rouge/Finch Meander study area. It is an interesting and healthy woodland community, which could be utilized as a buffer or as the natural component in an overall development concept.

AREA 4



LEGEND

- DOMINANT DECIDUOUS
- MIXED FOREST
- FIELD SPECIES
- PIONEERING SPECIES
- WETLAND
- OPEN WATER

N

AREA 5 REESOR WOODLOT - EAST

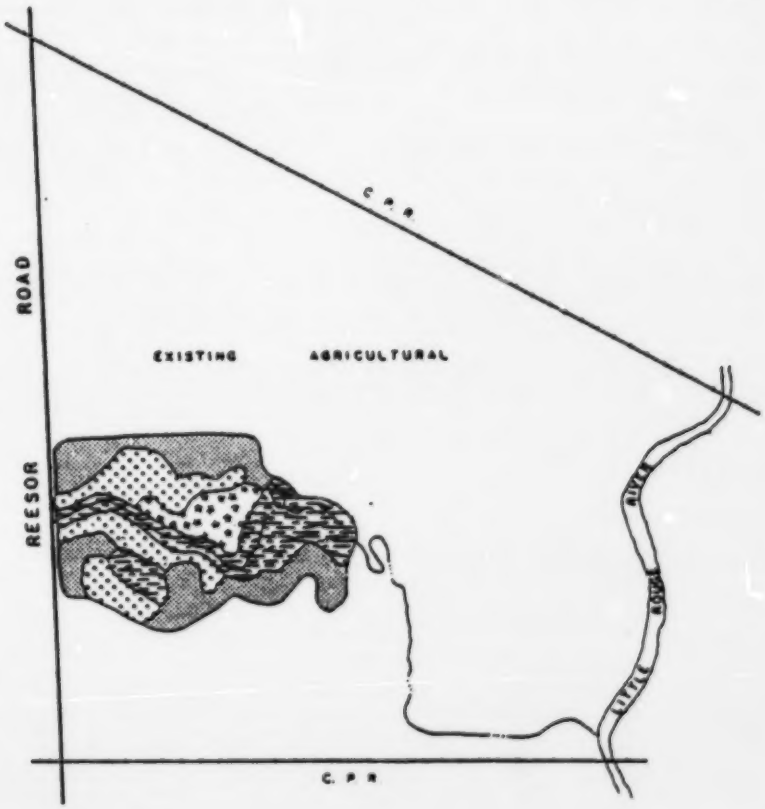
Area 5, part of Lot 6, Convession IV, is located on a small tributary of the Little Rouge River, on the east side of Reesor Road.

The dominant canopy species are 55% hemlock (Tsuga canadensis) and 20% white cedar (Thuja occidentalis), with co-dominants of 10% sugar maple (Acer saccharum) and 5% beech (Fagus grandiflora). The woodlot is cool and wet with luxuriant ferns, mosses, and an interesting assortment of water-tolerant herbs, such as watercress (Nasturtium officinale), virgina waterleaf (Hydrophyllum virginianum), bloodroot (Sanguinaria canadensis), foamflower (Tiarella cordifolia) and hepatica (Hepatica acutiloba).

The ground cover is dense, especially in the white cedar stands alongside the stream, making walking quite difficult. Regenerating species include a combination of white cedar, hemlock and white ash (Fraxinus americana). Only 9.6% of recorded plants were alien. The woodlot is not unusual in terms of forest composition or structure, yet it is a healthy natural area with minimal disruption. It is valuable for erosion control, dampening ground water fluctuations, and reducing run-off rates and siltation loads.

The Reesor Woodlot is a typical small streamside community. It is worthy of preservation for its ecological value to the stream, and its aesthetic quality. This small woods could easily be incorporated into a subdivision plan.

AREA 5



LEGEND

- DOMINANT CONIFER
- MIXED FOREST
- WETLAND
- PIONEERING SPECIES

N

AREA 6 WOODLANDS

The Woodlands is located on Little Rouge Creek south of Steeles Avenue and east of Reesor Road. It consists of 2 main forests connected by a Hydro corridor.

The southern portion of the area on the west side of Little Rouge Creek incorporates a forested valley wall and scrub flood plain. The natural terracing of the valley wall divides the forest into 3 distinct stands of mature Eastern White Cedar (Thuja occidentalis), Sugar Maple (Acer saccharum) amd American Beech (Fagus grandifolia).

Eastern White Cedar dominates the bottomland on both sides of the creek with a ground cover of ferns. The Sugar Maple stand forms a band aong the entire middle portion of the west valley wall. A small American Beech community occupies the top portion of the valley wall and tableland. Superior specimens of Sugar Maple and American Beech are found within this stand.

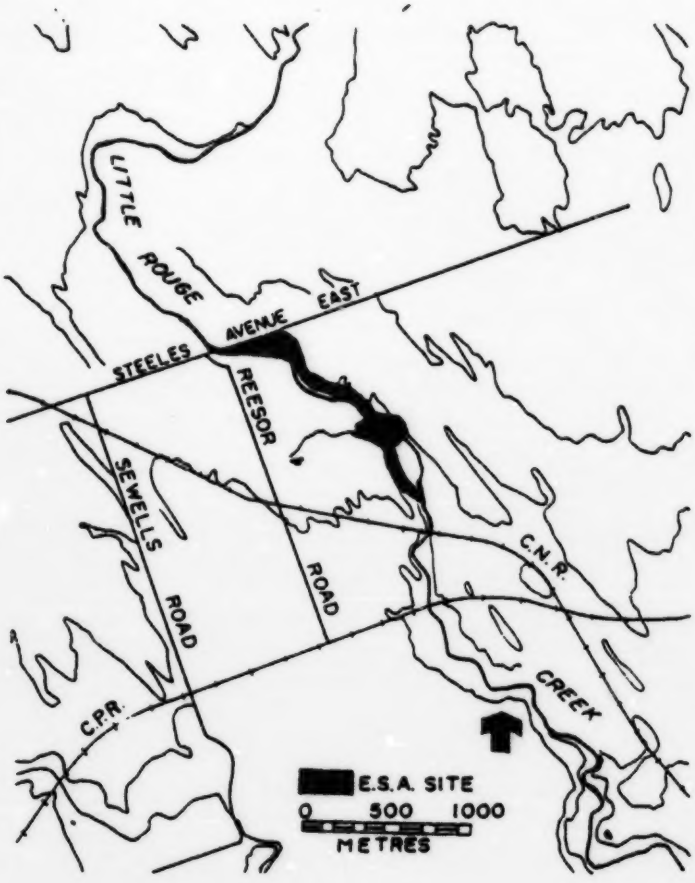
The northern section of Woodlands lies north of the Hydro corridor on the east side of Little Rouge Creek. This section incorporates a mature semi-open stand of Sugar Maple, some small stands of Eastern White Cedar and the adjacent flood plain of Willows (Salix spp.) and Poplars (Populus spp.). The Sugar Maple stand contains superior specimens of Eastern Hemlock (Tsuga canadensis) and Black Cherry (Prunus serotina).

The Hydro corridor which is composed of scrub species, functions as a travelway for wildlife movement between the north and south sections of the Woodland area.

The high quality east-facing stands of Eastern White Cedar, Sugar Maple and American Beech are mature and contain superior specimens of American Beech (20 m in height, 1 m DBH), Sugar Maple and Eastern Hemlock. Regenereation of these species is occurring and the Eastern White Cedar stand contains some mature Bitternut Hickory (Carya cordiformis) and approximately 20 Blue Beech (Carpinus caroliniana). This a high number of Blue Beech for such a small area. The west-facing Sugar Maple forest is of high quality due to its mature nature and the presence of the Carolinian species, Black Cherry. Black Cherry occurs in significant number and superior form on the upper slope. Superior specimens exceed 1 m DBH.

Hop Hornbeam (Ostrya virginiana) is a dominant overstorey species in the east-facing Sugar Maple stand. Such stands are of limited representation in the region as Hop Hornbeam will attain tree size only under optimum moisture preference and when a break in the canopy occurs (Maycock 1963). This section of Little Rouge Creek has been designated a potential environmentally significant area by the Toronto Field Naturalists (Juhola, pers. comm. 1982).

AREA 6



AREA 7 MEADOWVALE WOODLOTS

Area 7, covers 2 separate small woodlots shown as (a) and (b) on the accompanying map, and are located north of the unopened road allowance for Passmore Road.

Woodlot (a) is located in part of Lot 4, Concession V, on an east-facing slope and has 3 distinct habitats: a dominant coniferous ridge; a semi-mature maple stand; and a dense thicket containing pioneerng species. The entire woodlot is heavily disturbed. Wild raspberry (Rubus idaeus) is the domiant ground cover. Bird and small mammal counts were not undertaken for this woodlot. The woodlot does not contain any regionally significant plant species. A stream at the toe of the slope has been disrupted by agricultural practices.

Woodlot (b), in part of Lot 3, Concession V, is approximately 2 hectares in area and surrounded by corn fields. A small stream, which eventually drains into the Little Rouge River, passes through the woods. A residence is located in the middle of the site.

Woodlot (b) is aesthetically more attractive than (a). It contains a semi-mature sugar maple (Acer saccharum) canopy with a large variety of herbs and native wildflowers. Some of the more unusual native plants include starflower (Trientalis borealis), acute-lobed hepatica (Hepatica acutiloba), fringed polygala (Polygala paucifolia), wild ginger (Asarum canadense), and wild leek (Allium tricoccum).

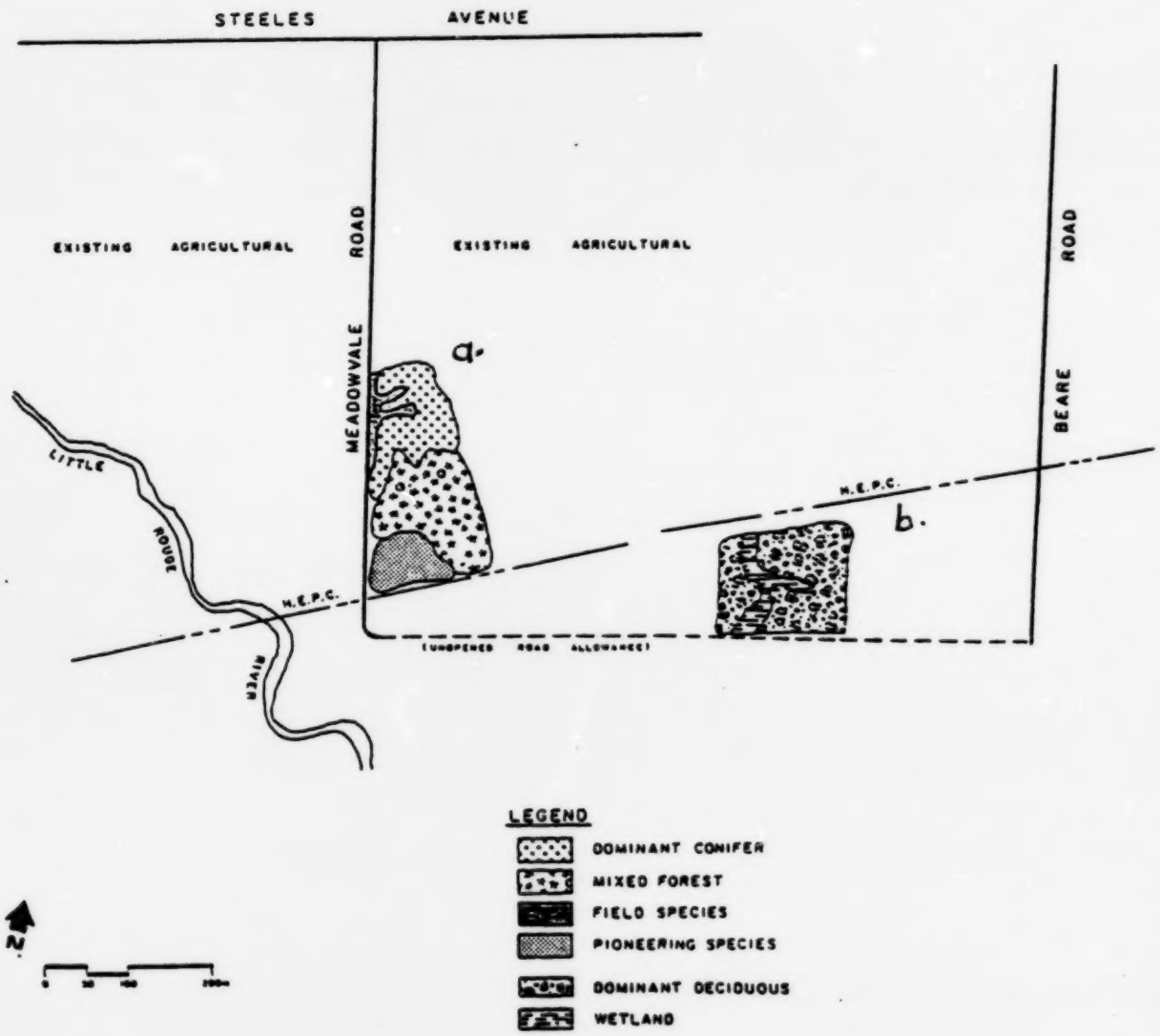
The streamside community is equally picturesque with dame's rocket (Hesperis matronalis), purple loosestrife (Lythrum salicaria), celandine (Chelidonium majus) and marsh marigold (Caltha palustris). This very lush woodlot and streamside habitat is healthy as indicated by the quality and diversity of plant life.

Woodlot (a) has a low sensitivity to activity. It is already heavily disturbed. Some larger tree specimens do occur and perhaps could be preserved and included in future development schemes.

Woodlot (b) is a diverse streamside community, though small in size. It performs valuable ecological functions such as cooling and purification of water, and

erosion control. This community could easily be preserved within an overall development scheme, and would substantially add to the health of the stream, and the aesthetics of development.

AREA 7



AREA 8 BARKEY WOODS

Area 8, in part of Lot 1, Concession V, is a high quality, mixed deciduous forest located on the west side of the Pickering Town Line, just south of the Ontario Hydro right-of-way. This tableland forest is dissected by 2 tributaries of the Petticoat Creek.

Stand analysis revealed that sugar maple (Acer saccharum) is the dominant canopy species with an importance value of 202 (out of a possible 300). Beech (Fagus grandifolia) (I.V.75) is the major co-dominant. Other important trees include hope hornbeam (Ostrya virginana) (I.V.17), and white ash (Fraxinus americana) (I.V.6).

Regeneration is predominantly sugar maple. Dense shade has reduced the understory layers. However, the spring floral community is abundant and includes trilliums (Trillium erectum, T. grandiflorum), foamflower (Tiarella cordifolia), bloodroot (Sanguinaria canadensis), violet (Viola sp.), toothwort (Dentaria diphylla), hepatica (Hepatica acutiloba), trout lily (Erythronium americanum), and mayapple (Podophyllum peltatum).

A number of superior tree specimens are present including beech and sugar maple. The beech specimens, while fewer in number, were larger in diameter than those of the maple. The maple/beech portion of the forest is located on a ridge of land surrounded by 2 streams.

Water tolerant shrubs and trees such as Manitoba maple (Acer negundo), the uncommon black maple (Acer nigrum), ironwood (Carpinus caroliniana), serviceberry (Amelanchier sp.), and leatherwood (Dircus palustris) border the streams. Ground cover is also lush with colonies of marsh marigold (Caltha palustris), jewelweed (Impatiens biflora), gooseberry (Ribes cynosbati), and raspberry (Rubus idaeus). A few standing pools of water provide conditions for small cattail (Typha latifolia) swales, and rich submergent and emergent growths. There is also ample evidence of fish, crayfish and invertebrate populations, indicative of the health of the streams.

The westerly portion of the study area is a mixed forest stand with a greater variety of shrubs and trees. It includes the previously mentioned dominants as

well as horse chestnut (Aesculus hippocastanum), red pine (Pinus resinosa), white pine (Pinus strobus), trembling aspec (Populus tremuloides), black cherry (Prunus serotina), bur oak (Quercus macrocarpa), white oak (Quercus alba), and hemlock (Tsuga canadensis). The understory layers include serviceberry and beaked hazelnut (Corylus cornuta). The alien plant composition at 10% is slightly below normal.

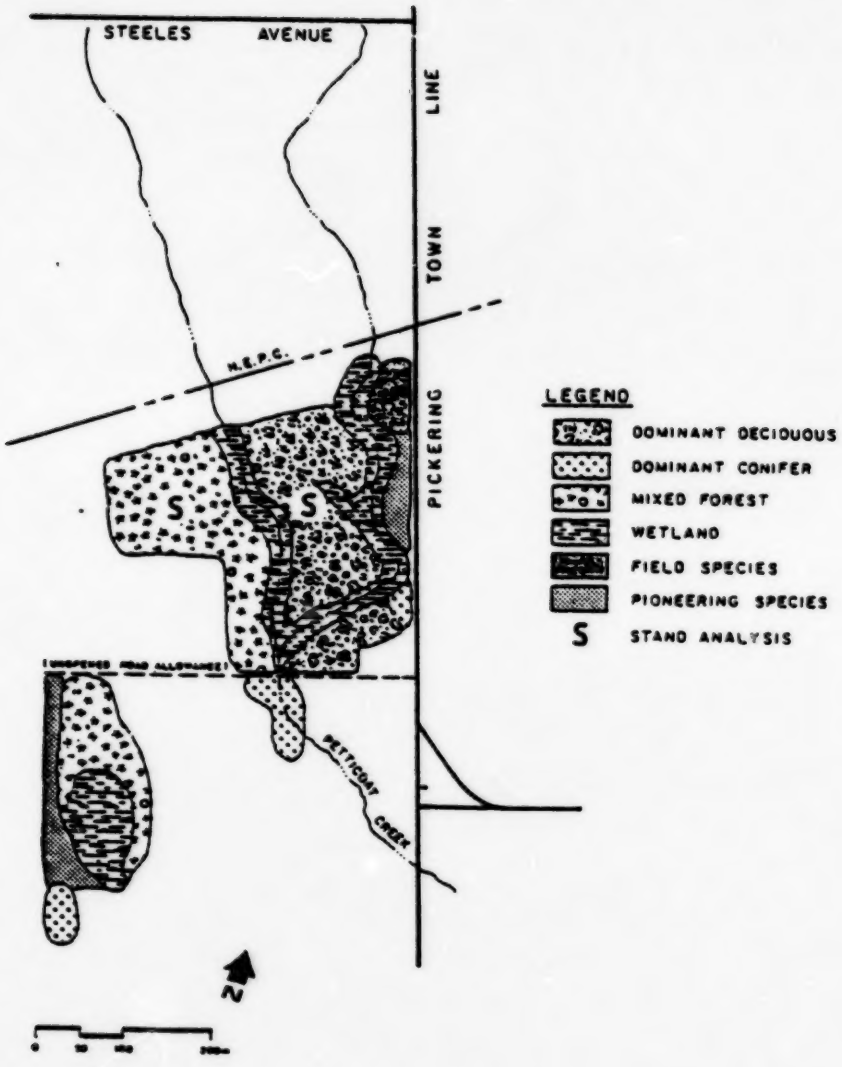
Due to its size (10 hectares), complexity of habitat units, and surrounding agricultural land uses, this forest has a high diversity of bird species. It attracts the more common types such as cardinal (Richmondena cardinalis), blue jay (Cyanocitta cristata), downy woodpecker (Dendrocopos pubescens), and black-capped chickadee (Parus atricapillus). These were all confirmed as breeding within the forest. It also provides special habitat for more unusual species such as the great horned owl (Bubo virginianus) and the regionally rare ruby-throated hummingbird (Archilochus colubris). Game birds such as the ring-becked pheasant (Phasianus colchicus) are frequent visitors to the forest edge.

In terms of small mammals, the woods may be low in diversity, although evidence of significant numbers of mole (Condylura cristata), hare (Lepus americanus), and eastern cottontail (Sylvilagus floridanus) were noted (Walden, 1974). Evidence of use by larger mammals such as white-tailed deer (Odocoileus virginianus), red fox (Vuples vuples), and coyote (Canis latrans) was also found during field surveys and through conversation with local residents.

The area is functionally valuable for erosion control and ground water dampening. It is also aesthetically superior to most other woodlots in the district. It is a relitavely stable environment, and capable of withstanding human interference due to its greater diversity and existing healthy state.

The area has great value for scenic landscape, recreational potential for future development, and due to it size should be considered for preservation.

AREA 8


STEELES AVENUE
TOWN LINE
PICKERING
H.E.P.C.
S
S
PETTICOAT CREEK
LEGEND
DOMINANT DECIDUOUS
DOMINANT CONIFER
MIXED FOREST
WETLAND
FIELD SPECIES
PIONEERING SPECIES
S STAND ANALYSIS

AREA 9 ROUGE-FINCH MEANDER/MILNE'S FOREST

The northern half of the study area, covering 65 hectares, is bounded by Finch Avenue on the south, Reesor Road on the east, the C.P.R. on the north, and Sewells Road on the west. The Rouge River meanders through the centre of the study area. Valley walls rise 40 metres in places and, where vegetation is absent, erosion is severe.

This part of the area can be divided into 3 main sections:

i) the open field/pioneering tree cover section in the north-west;
ii) the mixed forest tablelands above the Rouge River on the east; and
iii) the forested valleylands in the southwest section.

The northwest field/pioneering tree section is the least sensitive section of the area. The weed and herbaceous field species, combined with the variety of pioneering tree species such as Manitoba maple (Acer negundo), aspens (Populus spp.), bur oak (Quercus macrocarpa), and elms (Ulmus spp.) interspersed throughout, make the area attractive to a variety of bird and mammal species.

The eastern portion overlooking the Rouge River is covered by mixed, deciduous-dominant forests, with some small pockets of both pioneering species and conifers. Stand analysis of the northern mixed forest community (see study area map) showed that sugar maple (Acer saccharum) (I.V. 104), red oak (Quercus borealis) (I.V. 57), and white ash (Fraxinus americana) (I.V. 43) are the dominants. Other important species include black cherry (Prunus serotina) (I.V. 23), hop hornbeam (Ostrya virginiana) (I.V. 21), large-tooth aspen (Populus grandidentata) (I.V. 19, bitternut hickory (Carya cordiformis) (I.V. 15),d and hemlock (Tsuga canadensis) (I.V. 13). This is an example of a high quality sugar maple/red oak forest.

From the stand analysis of the southern mixed-forest community (see study area map), it was found that sugar maple (I.V. 30) and paper birch (Betula papyrifera) (I.V. 65) are the dominants. Also important are basswood (Tilia americana) (I.V. 16), red oak (I.V. 13), and black cherry (I.V. 10). Other less important species include bitternut hickory (I.V. 7), beech (Fagus grandifolia) (I.V. 7), large-tooth

aspen (I.V. 7), hemlock (I.V. 4), and hop hornbeam (I.V. 4). This sugar maple/paper birch forest is healthy and regenerating. Other communities in the eastern section include pioneering tree cover of aspens, speckled alder (Alnus rugosa), willows (Salix spp.), and wetlands.

There are 2 main wetland draws (see study area map). The more northerly of these forms a shallow ravine which exits into the steep cliffs above the river. Common wetland species such as cattail (Typha latifolia), jack-in-the-pulpit (Arisaema triphyllum), and others are found in these communities. Particularly severe erosion is occurring on the eastern slope of the Rouge River in this section. For a significant length of the river, steep cliffs predominate.

The variety of vegetation communities, dominated by sugar maple/hemlock, and sugar maple/ash, make this eastern section particularly attractive to wildlife. White-tailed deer (Odocoileus virginianus) have been sighted by local residents in this section on numerous occasions. This study area forms an important part of the range of the white-tailed deer in the vicinity of the Rouge River.

The remaining section of this portion of the study area is located in the southwest corner. It comprises the steep rise to a plateau at Finch Avenue and Sewells Road, the slope down to the east towards the river, and the river valleylands. The plateau in the west is covered by 2 communities: one, a mixed forest community of sugar maple and red oak; the other, a primarily coniferous community dominated by hemlock and white pine (Pinus strobus). These provide habitat for a number of bird species, particularly black-capped chickadee (Parus atricapillus) and white-breasted nuthatch (Sitta carolinensis).

The mixed forest community continues down the slope to the east, at times becoming more predominantly coniferous. Yew (Taxus canadensis) is a predominant goundcover over much of the slope. The cliffs beside the Rouge River contain a significant nesting colony of bank swallow (Riparia riparia). Well over 200 active nest holes were observed.

In the bottomlands, the forest cover is mostly sugar maple and white ash. As the soil becomes sandier, a greater number of aspen and cedar (Thuja occidentalis) appear. Immediately beside the river, the soil is very sandy and generally poorer

quality, and forest cover is sparser. Certain wetland sedges and grasses are more common beside the river.

The herbaceous cover throughout the study area shows a high variety and quality. Ten fern species were identified: maidenhair fern (Adiantum pedatum), lady fern (Athyrium filix-femina), bulblet fern (Cystopteris bulbifera), evergreen woodfern (Dryopteris marginalis), spinulose woodfern (Dryopteris spinulosa), ostrich fern (Matteuccia struthiopteris), sensitive fern (Onoclea sensibilis), Christmas fern (Polystichum acrostichoides), bracken fern (Pteridium aquilinum), and marsh fern (Thelypteris palustris). Other notable herbaceous species include turtlehead (Chelone glabra), blue-bead lily (Clintonia borealis), mitrewort (Mitella diphylla), and foamflower (Tiarella cordifolia). All common spring wildflower species are present including the baneberries (Actaea spp.), Canada anemone (Anemone canadensis), trout lily (Erythronium americanum), acute-lobed hepatica (Hepatica acutiloba), and trilliums (Trillium erectum, T. grandiflorum). All these species are abundant in the study area.

The view from any of the higher points is spectacular. The wide expanse of uninterrupted forested slopes and bottomlands provides a view that can be seen in very few other locations in Metro Toronto. At many vantage points no human impacts can be seen.

The cliffs beside the river at the southwest corner of the study area are a breeding site for a very large number of bank swallow. This is a significant concentration of this species (Nash, 1982). The sugar maple/red oak woods are of high quality, as are many of the hemlock covered slopes. There are many fine specimens of these species, and a significant number of other species from the southern deciduous forest region. The high diversity of biological communities identified (see study area map) is considered significant. The following rare tree species were identified in the study area: black walnut (Juglans migra) (N,P), and red pine (Pinus resinosa) (R). Some regionally rare birds were also observed: broad-winged hawk (Buteo platypterus), pileated woodpecker (Dryocopus pileatus) (confirmed breeding), and white-breated nuthatch. Portions of the study area have been designated environmentally significant by the M.T.R.C.A. The Ministry of Natural Resources has also concluded that the area may be provincially significant and requires further investigation.

The southern portion of the study area includes those portions of the Morningside Creek and Rouge River valleys south of Finch Avenue, and their common tablelands. It covers approximately 35 hectares and is characterized by a gently rolling, sand-clay plain with prominent, deeply eroded river valleys. The combination of vegetation associations and valley settings is outstanding. They represent one of the last remaining undisturbed ravine corridors within Metropolitan Toronto. The uniqueness of the Rouge Valley is directly attributable to historical and cultural settlement patterns, and recent planning decisions, i.e., the Minister's Zoning Order 20/74, to freeze development (Mickiewicz, 1982).

This area is a contrast of scenes: cedar banks, aspen and birch groves, streamside meadows, open fields, steep slopes, scrub and pioneering thickets, and plateaus containing mature pine, maple, hemlock, ash and beech combinations. The existing agricultural/recreational land use is not intensive.

The Rouge River and its tributaries are characterized by steep, highly erodable valley walls. The Rouge Valley is widest at this point (400 to 825 metres), with a vertical height of 50 metres. At the confluence of the Rouge River and Morningside Creek, the valley crest is 25 metres. The Rouge slopes are, therefore, steepest and highest within the study area.

The area offers a great diversity of habitats, and as a result supports a broad range of bird and animal life. This is rare for such close proximity to a large urban centre.

The following mammals are found in this part of the study area:

snowshoe hare	coyote
eastern cottontail	red fox
grey squirrel	racoon
red squirrel	ermine or short-tailed weasel
woodchuck	long-tailed weasel
eastern chipmunk	striped skunk
white-footed mouse	white-tailed deer
deer mouse	muskrat
meadow-jumping mouse	

Forest stand (Sb), as identified by Riley and Varga (1980), is one of 5 comparable coniferous forest stands in southern Ontario. This stand of white pine (Pinus strobus) is located on a northern slope and series of plateaus, north of the Morningside Creek on the Metro Zoo boundary (see study area map 9 and Natural Features map). Specimen measurements included many circumferences greater than 200 centimetres. Co-dominant trees are hemlock and white cedar (Thuja occidentalis). Other interesting species include black cherry and sugar maple. As Riley stated, the stand is rare not for its taxa, but because it is a remnant, high quality habitat (Riley, 1980).

Although pure pine forests do not usually have a great variety of ground cover plants, there are several notable native herbs in the understory layer including maindenhair fern (Adiantum pedatum), fringed polygala (Polygala paucifolia), spring beauty (Claytonia virginica) and trilliums.

Forest stand (Sc) is located on the west slope of the Rouge River Valley south of the Finch Avenue - Sewells Road intersection (see study area map 9). It is a particularly sensitive association, not only because of the mature species composition, but also as a result of topographic and soil constraints, i.e., steep sandy soils with numerous springs.

The slope portions of the forest are dominated by hemlock. The co-dominants include sugar maple and white cedar. All these tree species are exceedingly large, and the understory layers are sparse due to the dense shade and cooler micro-climate. At the toe of the slope lush growths of ostrich fern (Matteuccia struthiopteris) stablize the soil. Large speciments of black maple (Acer nigrum) were also noted along the valley floor. While stable, this stand did not contain significant ground cover or shrubs. The canopy is comprised of mature trees. Where disruption has occurred, the slope has been subject to severe erosion. An unusual assortment of ground flora exists in pockets along the slope, and includes colonies of yellow lady's slipper (Cypripedium calceolus var. pubescens).

The following plants are considered to be regionally (R), provincially (P), or nationally (N) rare: wood anemone (Anemone quinquefilia) (N), black walnut (N,P), and ripiarian lyne grass (Elymus riparius) (P,R).

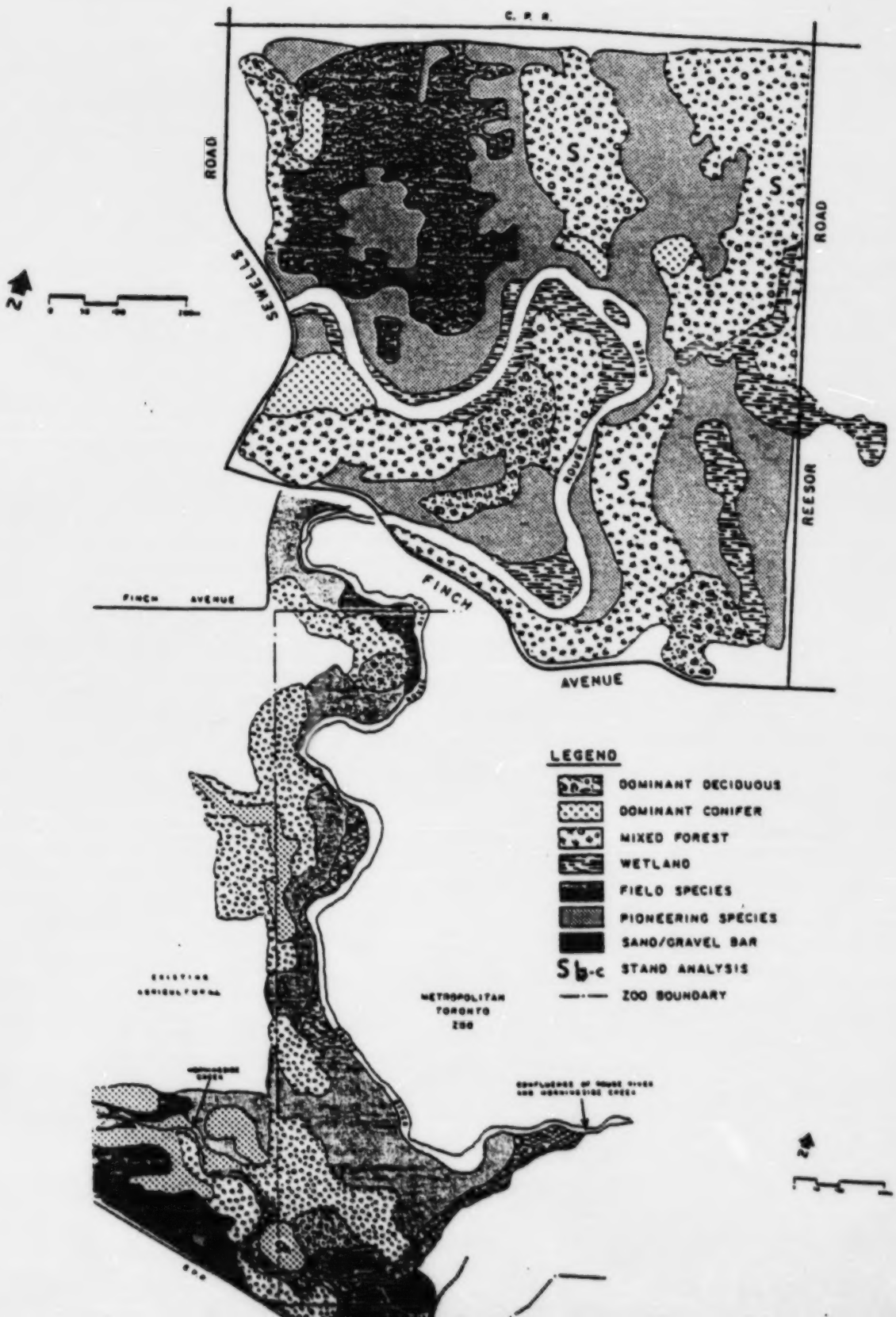
The following birds are considered to be regionally rare and have been confirmed as breeding within this study area:

Butco lineatus	red-shouldered hawk
Bonasa umbellus	ruffed grouse
Philohela minor	American woodcock
Dryocopus pileatus	pileated woodpecker
Sphyrapicus varius	yellow-bellied sapsucker
Empidonax minimum	least flycatcher
Sitta carolinensis	white-breasted nuthatch
Dendroica caerulescens	black-throated blue warbler
Oporornis philadephia	mourning warbler
Setophaga ruticilla	American redstart
Pooecetes gramineus	vesper sparrow

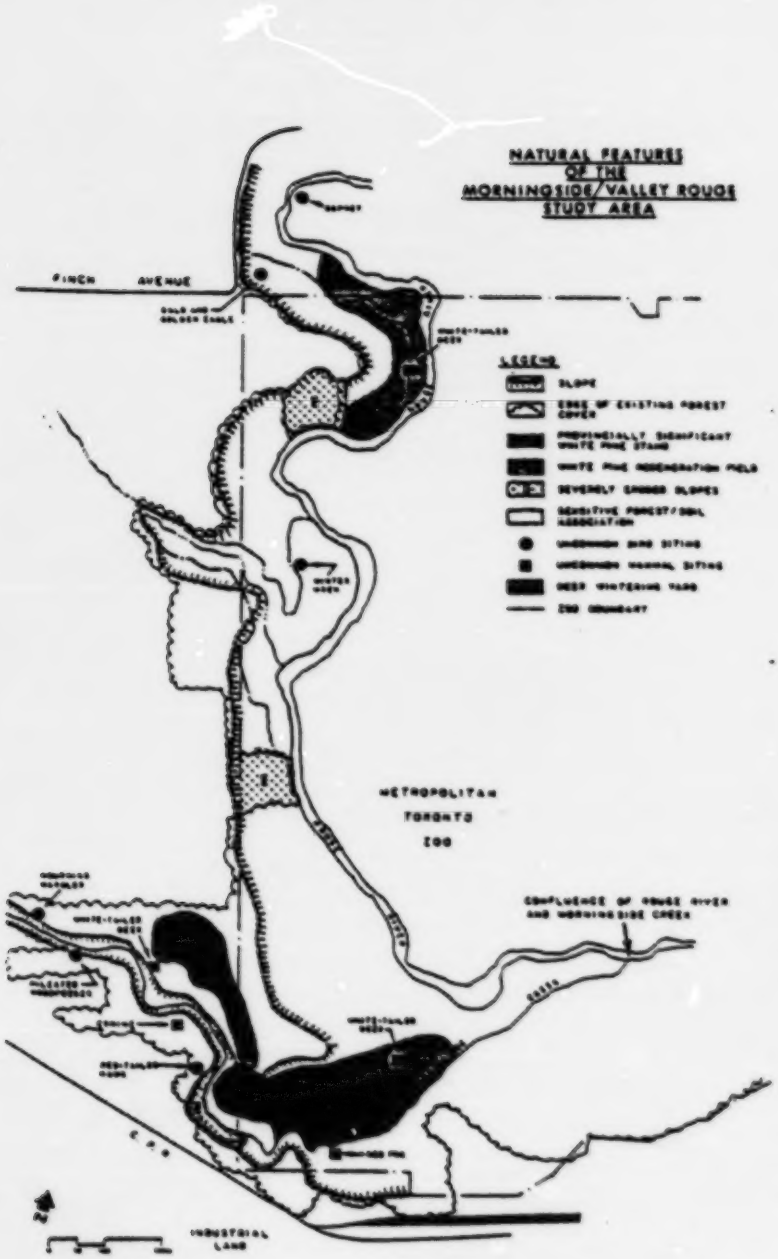
Study Area 9 is particularly significant due to the width and height of the valley at this location. It contains outstanding forests, rare birds and plants, and an unusual variety of birds and small and large mammals. The integrity of the valley/slope interface is important to the continued existence of the wildlife.

The erodable nature of the Rouge Valley walls will require specific planning and construction attention. Consideration should be given to placing an appropriate designation on these lands, recognizing their special significance to the region and to the urban population.

AREA 9


C. P. R.
SEWELLS ROAD
REESOR ROAD
ROUGE RIVER
FINCH AVENUE
FINCH AVENUE
METROPOLITAN TORONTO ZOO
LEGEND
DOMINANT DECIDUOUS
DOMINANT CONIFER
MIXED FOREST
WETLAND
FIELD SPECIES
PIONEERING SPECIES
SAND/GRAVEL BAR
Sb-c STAND ANALYSIS
ZOO BOUNDARY

AREA 9 - NATURAL FEATURES MAP



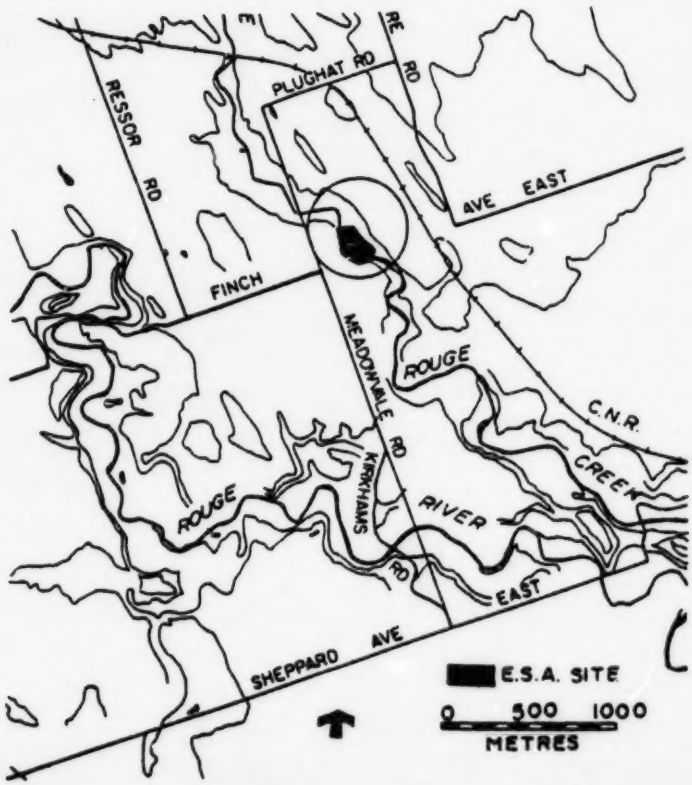
AREA 10 DILLER WOODS

Diller Woods is located on the Little Rouge Creek northeast of Finch Avenue and Meadowvale Road, in the City of Scarborough. It consists of a residual stand of mature Sugar Maple (Acer saccharum)/White Birch (Betula papyrifera) with an adjacent grassland community located on a west valley wall. The Sugar Maple/White Birch stand supports a variety of wildflowers while the grassland community contains wet areas of Variegated Horsetail (Equisetum variegatum), sedges (Carex spp.), rushes (Juncus spp.) and spike-rushes (Eleocharis spp.).

The Sugar Maple/White Birch stand supports nationally rare Bog Twayblade (Liparis loeselii) which was found in one of numerous wet depressions in the old field community.

The area also supports the regionally uncommon Small Yellow Lady's-Slipper (Cyripedium calceolus var. parviflorum).

AREA 10



AREA 11 BEARE ROAD WOODLOT

This 7 hectare woodlot is located in part of Lot 3, Concession IV, west of the corner of Beare Road and Finch Avenue. It is on a ridge of land immediately overlooking the C.N.R. Several residences are situated on the woodlot perimeter. The woods are a fine example of a semi-mature sugar maple (Acer saccharum) /beech (Fagus grandifolia) community.

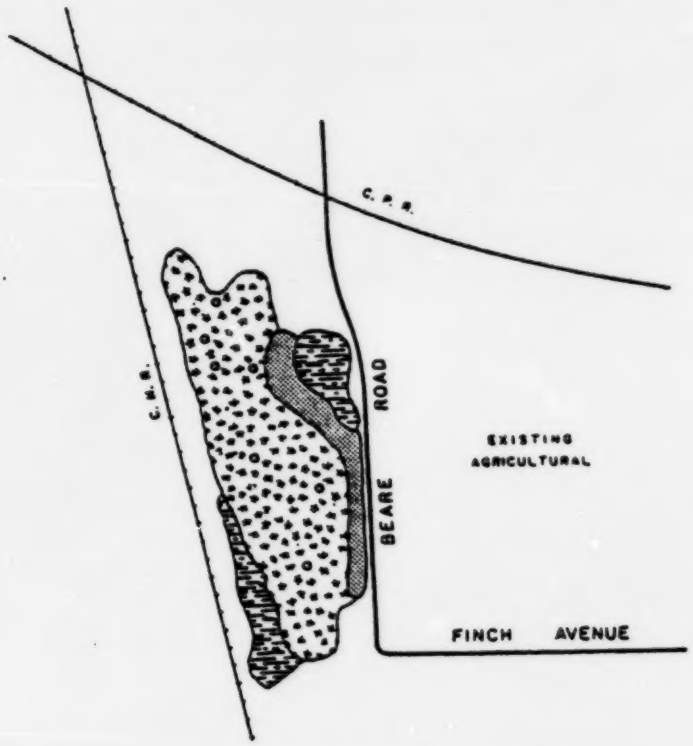
There appears to be a rough access road winding along the top of the slope, and some tree cutting along the rise has occurred recently. Nevertheless, it is a high quality, picturesque woodlot, very conducive to outdoor recreation and nature interpretation.

In addition to the canopy dominants, several other interested species occur including paper birch (Betula papyrifera), ironwood (Carpinus caroliniana), white cedar (Thuja occidentalis), and basswood (Tilia americana). The ironwood grows along the toe of the slope where seasonal flooding occurs.

The area is particularly interesting for its variety and quantity of ferns including woodferns (Dryopteris marginalis, D. spinulosa), ostrich fern (Matteuccia struthiopteris, sensitive fern (Onoclea sensibilis), Christmas fern Polystichum acrostichoides), and fragile fern (Cystopteris fragilis). Apart from the fern growth, the understory and gound cover layers are quite sparse. The woodlot is stable, and provides adequate cover for several species of more common birds and smaller mmammals such as eastern cottontail (Sylvilagus floridanus), mole (Condylura cristata), blue jay (Cyanocitta cristata), and wood thrush (Hylocichla mustelina). The lack of habitat diversity makes its value for wildlife less than other study areas. However, it is extremely natural with only 2% of the recorded plant species being alien.

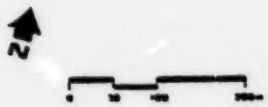
Although the forest does not contain any rare plants, birds or animals, it is a high quality natural area. It provides an excellent noise barrier to the nearby rail-line, and has great potential as a natural resource component in an overall land use plan.

AREA 11



LEGEND

- MIXED FOREST
- WETLAND
- PIONEERING SPECIES



AREA 12 TOWNLINE SWAMP

Townline Swamp is approximately 4 hectares in size and is located in part of Lot 1, Concession IV, along the western side of the Pickering Town Line just north of the C.P.R. The surrounding land uses are not intensive, i.e., landscape nursery and agriculture.

The swamp contains a wide variety of habitat units with good interspersion or "mixing". The land is regularly flooded, especially at spring run-off, and is permanently saturated. It provides excellent waterfowl habitat.

The total area is divided as follows: 1 hectare of open water with heavy submergent growth; 2 hectares of edge and treed zones; and 1 hectare of cattail (Typha latifolia) swales, interspersed with colonies of grass Carex, Scripus, and Potamageton species. Duckweed (Lemna minor) forms a thick floating mat on the water surface.

The western side of the swamp is dominated by 95% cattail, black ash (Fraxinus nigra) and silver maple (Acer saccharinum). The eastern side of the swamp is more diverse, and shows a progression of cattail, Carex, Scripus, grass and pioneering field species with associated water-tolerant herbs. The herbs include dame's rocket (Hesperic matronalis, swamp milkweed (Aslepias incarnata), marsh marigold (Caltha palustris), day lily (Hemerocallis fulva), bugleweed Lycopus uniflorus), purple loosestrife (Lythrym salicaria), and catnip (Nepeta cataria).

The slopes and drier field habitats exhibit a variety of shrubs, young trees and weeds that are valulable wildlife food sources including nannyberry (Viburnum lentago), dogwoods (Cornus rugosa, C. stolonifera, choke cherry (Prunus virginiana), black current (Ribes americanum), swamp current (Robes lacustre), goldenrod (Solidago sp.), and nightshade (Solanum dulcamara).

The breeding bird data collected indicate that the swamp, although small, contains a significant variety of breeding waterfowl such as wood duck (Aix sponsa, blue-wing teal (Anas discors), and Canada goose (Branta canadensis). Other sightings of birds utilizing this area as a source of food or cover include pileated woodpecker (Dryocopus pileatus), great blue heron (Ardea herodias),

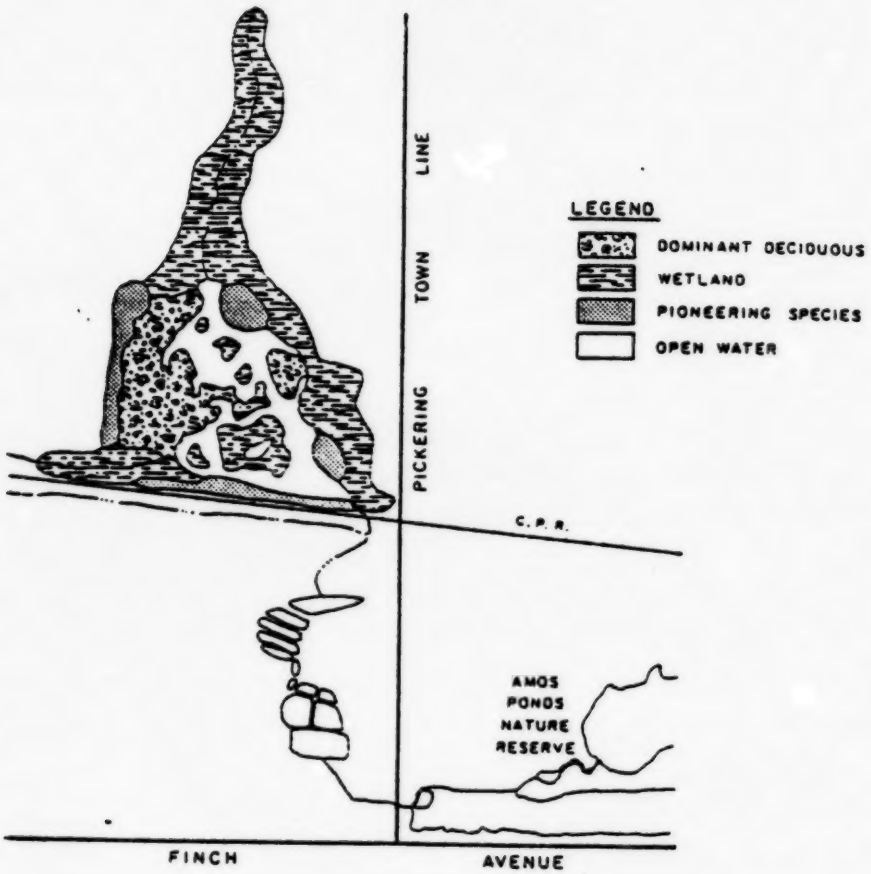
green heron (Butorides virescens), black tern (Chlidonias niger), and black-billed cuckoo (Coccyzus erythropthalmus). The pileated woodpecker and great blue heron are considered regionally rare (M.T.R.C.A. 1982)). Not including migrants, 34 species of birds have been recorded in this swamp.

The area serves as a water storage area and wildlife concentration point for waterfowl and provides an important habitat for a variety of avian species including several regionally rare species such as pileated woodpecker and great blue heron.

The swamp is a healthy, high quality natural area, supporting a large waterfowl population. The scenic, educational and recreational values of the area are high. It is a prime habitat for waterfowl and wading birds, and may be an important resting environment for migrant species.

As swamp and marshes are becoming increasingly uncommon along the lakeshores, consideration should be given to placing an appropriate land use designation on the area which would recognize its particular biological significance.

AREA 12


LEGEND
DOMINANT DECIDUOUS
WETLAND
PIONEERING SPECIES
OPEN WATER
PICKERING TOWN LINE
C. P. R.
AMOS PONDS NATURE RESERVE
FINCH
AVENUE

N

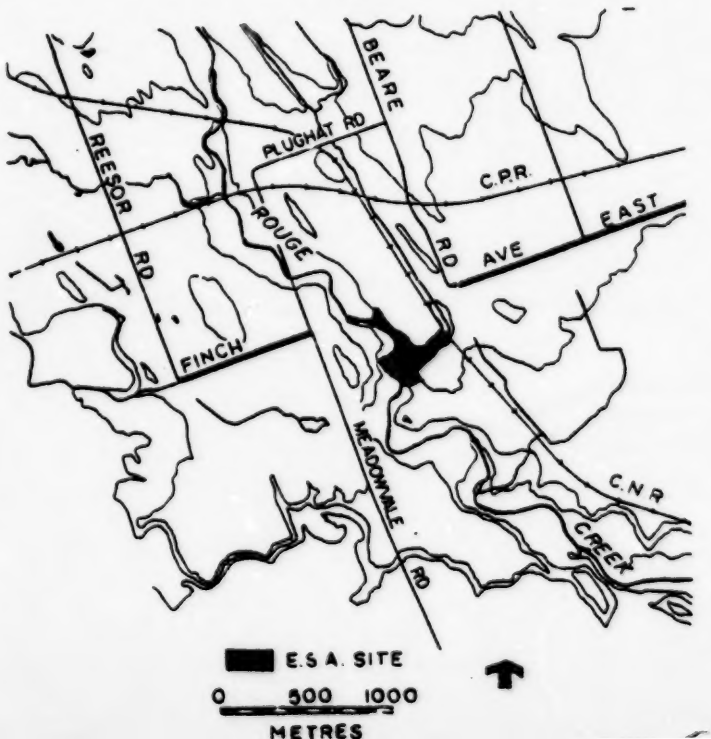
AREA 13 -PEARCE WOODS

Pearce Woods is located on the Little Rouge Creek southeast of Finch Avenue and Meadowvale Road, in the City of Scarborough. The site consists of an extensive mature Sugar Maple (Acer saccharum)/Eastern Hemlock (Tsuga canadensis) community. A narrow wet ravine containing a tributary bissects the Sugar Maple/Eastern Hemlock stand. This wet bottomland ravine contains numerous wetland species, such as Marsh Buttercup (Ranunculus septentrionalis), Marsh Marigold (Caltha palustris), and Meadow Horsetail (Equisetum pratense).

Pearce Woods covers an extensive area and contains superior specimens of Sugar Maple and Eastern Hemlock. Regeneration of both species is evident in the understory and ground cover strata. These woods provide habitat for a healthy variety of woodland wildflowers.

The Sugar Maple and Eastern Hemlock stand provides habitat for the nationally rare Wood Anemone (Anemone quinquefolia). The regionally rare Map Turtle (Graptemys geographica) also occurs here (Johnson 1983b).

AREA 13



AREA 14 TABOR'S HORSETAIL MEADOW

Tabor's Horsetail Meadow consists of small horestail meadows along the eastern edge of the Little Rouge Creek just south of Beare Road, in the City of Scarborough. This meadowland remains permanently wet throughout the year and is dominated by horsetails (Equisetum spp,), grasses (Graminae spp.) and sedges (Carex spp.). This area is a remnant of a formerly more widespread site type and contains several rate and unusual plants (Riley 1980).

Tabor's Horsetail Meadow is of limited representation in the region and a remnant of a formerly more widespread vegetation community type (Riley 1980).

Provincially and regionally rare Shining Ladies'-tresses (Spiranthes lucida) and regionally rare Poverty Grass (Danthonia spicata), Fringed Gentian (Gentiana crinita) and Linear-leaved Panic-grass (Panicum linearifolium) were found by Riley (1980). The Shining Ladies'-tresses occur as one of two sites within 80 kilometres of Toronto.

AREA 14

AREA 15 LITTLE ROUGE FOREST

Little Rouge Forest is situated on the boundary between the City of Scarborough and the Town of Pickering, north of Highway 2 and east of Sheppard Avenue.

The land rises northward onto a sandy lacustrine plain. The deposits in this area are mixed with clay in places and are occasionally scattered with boulders. These areas often have imperfect drainage (Riley 1978). Detailed sections taken along the Rouge River and Little Rouge River show a transition from a sandy surface layer, with clayey silt at water level, south to a more stratified slope that slumps to the river where the surface layer is gravel.

The Little Rouge River has a predominantly sandy upper layer along the valley walls. The base of the valley walls is dark, gray silt-till in the north and shale bedrock in the south. This section south of Twyn Rivers Drive is characterized by steep valley walls covered by closed canopy forests. The dominant plant species vary depending on the location. The aspect of the valley walls has a profound effect on the composition of the ground cover species. Specifically, the west-facing valley walls are wet and characterized by Rouge Horsetail (Equisetum hyemale) and several fern species; whereas east-facing valley walls have drier soils and a thick leaf litter layer. The plateau between the 2 branches of the Rouge River is dominated by American Beech (Fagus grandifolia), Eastern Hemlock (Tsuga canadensis) and Sugar Maple (Acer saccharum). This plateau descends steeply on each side toward the bottomland flood plains.

The forested bottomland to the east of the Little Rouge Creek is dominated by an extensive stand of mature Crack Willow (Salix grafilis). The characteristic dark, wet soil is covered by Ostrich Fern (Matteuccia struthiopteris). The valley wall at this point is dominated by Sugar Maple and Eastern Hemlock to the north, and American Beech, Red Oak (Quercus rubra) and Sugar Maple to the south.

The remainder of the Little Rouge Forest lies north of Twyn Rivers Drive in the vicinity of Meadowvale Road and is connected to the southern portion by the interfluvial plain at Twyn Rivers Drive. The valley walls on both branches of the Rouge River are precipitous with changing aspects. This section of the Rouge watershed comprises approximately 50 percent of the Little Rouge Forest.

The east-facing slopes are forested by mature, closed stands of Eastern Hemlock and mature, closed deciduous stands of Sugar Maple, Red Oak and White Ash (Faxinus americana). West-facing slopes are dominated primarily by mature open and semi-open deciduous stands of American Beech, Sugar Maple, Red Oak and a small clump of Eastern White Cedar (Thujha occidentalis).

The flood plain communities are on wet, sandy-gravelly soils. Dominant community types are willow (Salix spp.) and poplar (Populus spp.) scrubs, and immature stands of the same species.

The narrow interfluvial tableland to the north and south of Twyn Rivers Drive connects these areas to provide a wildlife corridor.

The bottomland forests, and tableland forests south of Twyn Rivers Drive are of high quality due to their maturity and relatively undisturbed nature. The forests are dominated by Manitoba Maple (Acer negundo) and mature Sugar Maple, Red Oak, Willow, Eastern Hemlock and White Birch (Betula papyrifera) (Riley 1980).

The forests north of Twyn Rivers Drive are generally of high quality and include some individual specimens of unusual proportions. A section of the area is comprised of a mature stand of Sugar Maple/Eastern Hemlock, containing superior speciments. Both species exhibit natural regeneration in the understory. The mature Sugar Maple/Red Oak stand shows some evidence of regeneration. This area supports a significant number of Carolinian tree species, occurring at the northern limit of their range. These include Blue Beech (Carpinus caroliniana), Bitternut Hickory (Carya cordiformis), Butternut (Juglans cinerea), Black Walnut (Juglans nigra), Black Cherry (Prunus serotina), Witch Hazel (Hamamelis virginiana) and a Carolinian associated species Hop Hornbeam (Ostrya virginiana).

The Little Rouge Forest is an area of limited representation in the region as it contains a stand of Hop Hornbeam. Only 3 such stands are known within the region. The forest also provides habitat for Red-shouldered Hawk (Buteo lineatus), which requires large, undisturbed tracts of land.

A High diversity of plant community types are established on the valley walls and flood plain. Community types include mature-mixed forest, mature coniferous

forest, and mature and immature deciduous stands. Scrub and small marshy communities occur on the flood plain. Such diverse habitats are accompanied by a diversity of associated flora and fauna. Three-hundred and eighty-five plant species and fifty-one avian species were recorded for the area. The Little Rouge Forest provides habitat for a number of nationally, provincially and regionally rare species. The following rare plants were found by staff, Riley (1978), and Riley, Varga and Oldham (1980).

Nationally and/or provincially rare plant species include:

Sicklepod (Arabis canadensis)
Poke Milkweed (Asclepias exaltata)
Sedge (Carex peckii)
Canadian Waterleaf (Hydrophyllum canadense)
Black Walnut (Juglans nigra)
Sundrops (Oenothera pilosella)
Sycamore Platanus occidentalis)
Shining Ladies'-tresses (Spiranthes lucida)
Pale Blueberry (Vaccinium pallidum)
White Violet (Viola pallens)

Regionally rare plant species found in the Little Rouge River Forest include:

Upland Bent (Agrostis perennans)
Sicklepod (Arabis canadensis)
Arrow-leaved Aster (Aster sagittifolius)
Brownish Sedge (Carex brunnescens)
Brittle-leaved Sedge (C. eburnea)
Sedge (C. gracillima)
Sedge (C. peckii)
Beaked Sedge (C. rostrata)
Reedgrass (Cinna latifoila)
Narrow Nut-grass (Cyperus filiculmis)
Horsetail (Equisetum hyemale var pseudohyemale)
Robin's Plantain (Erigeron pulchellus)
Dog Mustard (Erucastrum gallicum)

Nodding Stickseed (Hackelia deflexa)
Giant Wild Sunflower (Helianthus giganteus)
Red Cedar (Juniperus virginiana)
Hairy Honeysuckle (Lonicera hirsuta)
Sundrops (Oenothera pilosella)
Umbrella-wort (Oxybaphus nyctagineus)
Broad-leaved Panic-grass (Panicum latifolium)
Red Pine (Pinus resinosa)
Common Polypody (Polypodium vulgare)
Swamp Goldenrod (Solidago uliginosa)
Shining Ladies'-tresses (Spiranthes lucida)
White Violet (Viola pallens)

The regionally rare Wood Turtle (Clemmys insculpta) was also reported to occur here (Johnson 1983b).

Two regionally rare avian species were observed in the area; however, it is yet to be determined if they nest at this site:

Great Blue Heron (Ardea herodias)
Red-shouldered Hawk (Buteo lineatus)

An active Great-horned Owl's (Bubo virginianus) nest was observed in the Sugar Maple forest northwest of Twyn Rivers Drive.

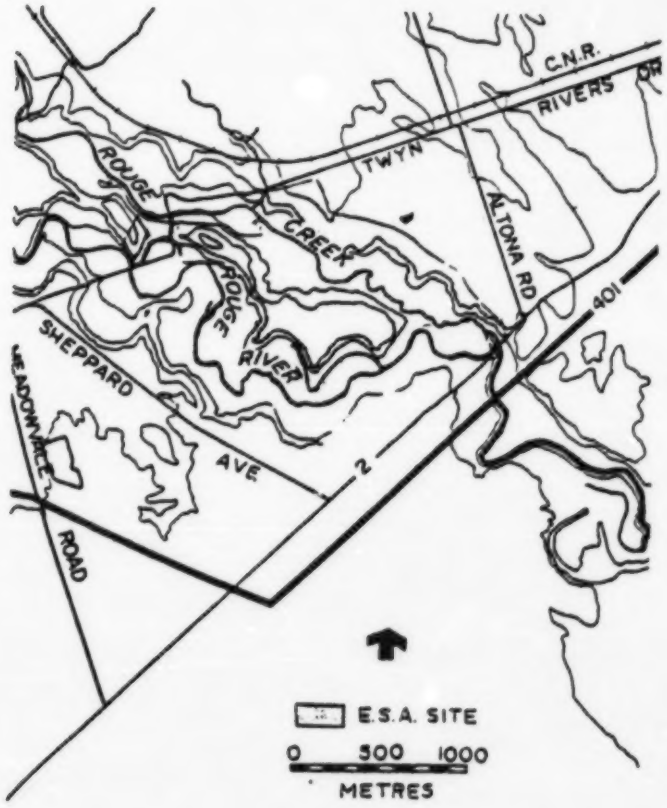
The Little Rouge Forest complex supports 22 of the 111 Ontario wildflower species which have been listed by the Federation of Ontario Naturalists Wildflower Committee and others (Catling 1980) as exploited native plants (Riley 1980). The wooded bottomland, valley walls and tableland between Little Rouge Creek and the Rouge River, north of Highway 2 and east of Meadowvale Road support a diversity of topography and continuous vegetation. This area is by far the largest continuous woodland habitat left in Metro Toronto (Riley 1980).

The Ministry of Natural Resources (1982) has designated the Little Rouge Forest as a geological site of provincial significance as it may be the only site of the Whitby Formation Upper Member in the Toronto area. Exposures of 2.4 metres in

depth are evident. The Whitby Formation belongs to the Nottawasaga Group of the Ordovician Period, Paleozoic Era. This section also contains significant fossils.

The Little Rouge Forest has also been identified as a senstive area by the Ministry of Natural Resources (1978) and selected as a candidate nature reserve (Hanna et al 1981).

AREA 15



AREA 16 MORNINGSIDE CREEK FOREST

Morningside Creek Forest is located west of Meadowvale Road, north of Sheppard Avenue, in the City of Scarborough, and includes the confluence of the Rouge River and Morningside Creek. The majority of the area is contained within the Metro Toronto Zoo limits. The general character of the river valley is narrow flood plain with steep forested valley walls to the east and gently sloping valley walls to the west at the confluence of Morningside Creek and the Rouge River.

The area supports Sugar Maple (Acer saccharum), Eastern Hemlock (Tsuga canadensis), and Eastern White Cedar (Thuja occidentalis), immature Maple seasonal swamp, White Birch (Betula papyrifera) woods, stream-side meadows and a remnant White Pine stand.

The flood plain containing the confluence of the Rouge River and Morningside Creek, acts as a wildlife corridor between the Rouge River valley to the east, and Morningside Creek to the west. Species which occupy the area include White-tailed Deer (Odocoileus virginianus) and Red-shouldered Hawk (Buteo lineatus).

The area surrounding the confluence of the Rouge River and Morningside Creek serves as a yarding area for a significant population of White-tailed Deer. Some 10 to 20 deer have been reported by Harply (1982) as occuring here. The Morningside Creek Forest contains stands of mature Sugar Maple/Eastern Hemlock, Eastern White Cedar, Maple/Oak and White Pine. The latter species occurs only under excellent habitat conditions. The forested slopes contain superior specimens of Eastern Hemlock, and in particular White Pine measuring 0.5 m DBH. The ravine containing White Pine is virtually inaccessible and therefore relatively undisturbed.

The White Pine stand is a small remnant area and of limited representation in the region. The even-aged White Pine are approximately 110-120 years old and the stand is one of less than half a dozen comparable sites documented in Ontario, southwest of the Canadian Shield (Riley and Varga 1980).

The Morningside Creek Forest is an area of limited representation in the region as it provides habitat for Red-shouldered Hawk which requires large, undisturbed tracts of land.

The Morningside Creek Forest contains a high diversity of biological communities and associated flora and fauna. Community types include Sugar Maple, Hemlock and Cedar slopes, immature Maple seasonal swamp, White Birch stands, streamside meadows, White Pine stand, scrub and open fields. The area contains the provincially rare Riparian Lyme Grass (Elymus riparius).

The area also contains the regionally uncommon Large Yellow Lady's-slipper (Cypripedium calceolus var. pubescens).

The Morningside Tributary has been identified as a significant life science area by the Ministry of Natural Resources (Hanna et al. 1981). The Toronto Field Naturalist Club has also designated this section of the Rouge River and Morningside Creek as an environmentally significant area (Environment Group 1982).

AREA 16